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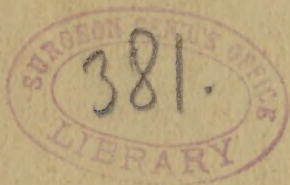
Angina and Pneumonia before
1857 and since; with the
Pathology of Diphtheria
in its Various Phases.

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ANGINA AND PNEUMONIA

BEFORE 1857 AND SINCE;

WITH THE PATHOLOGY OF DIPHTHERIA IN ITS VARIOUS PHASES.*

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THIS paper is offered as a contribution to the history and nature of diphtheria; to show that, in the light of many observations of later years, it must be regarded as a constitutional disease, often with little manifestation in the fauces, and sometimes an entire absence there of the exudation-membrane from which its name is derived. As a preparation for a trustworthy presentation of the subject, a brief view will be taken of the varieties of angina and faucial inflammation observed before 1857—the date of the onset of the present epidemic of diphtheria in America—and also a view of the acute pneumonia of the same period.

Before 1857 diphtheria was known in the United States only in French literature. We might occasionally meet with a case of exudative pharyngitis, to which we would give the name of *diphtherite*, as we had learned from Bretonneau to designate it; but such a disease never gave evi-

* Read before the Kings County Medical Association, January 2, 1889.



dence of being infectious. So in England, as late as 1855, Barlow says, in his "Practice of Medicine," in his lecture on cynanche: "There is indeed another form of this disease, to which the term *diphtherite* has been applied by French authors"—showing that it was something with which he in England was personally unacquainted.

Inflammations of the fauces, unattended by plastic exudation, were common affections. They were characterized by fever and general *malaise*, with difficult or painful deglutition, varying in severity according as the tonsils were more or less involved. The inflammation was superficial or it was deep-seated, including the entire pharynx and soft palate, and often extending into the posterior nares and the Eustachian tubes.

It was catarrhal, rheumatic, or parenchymatous. It might present the form of "a bright-red efflorescence of the throat, with tumefaction and copious secretion of mucus; or, tense and dry, the mucous membrane might have a duller and deeper red; or it might be marked by relaxation and puffiness of the mucous membrane, in consequence of serous exudation under the epithelium or in the substance of the mucous tissue itself, or in the submucous areolar tissue."

These were forms of inflammation which had no serious results, the attack covering two or three days, without sequelæ. In these cases the tonsils were involved, but only in the form of a superficial inflammation, although sometimes with considerable enlargement, but not to the extent of closing the isthmus faucium, the swelling in some instances subsiding after free catharsis.

Follicular amygdalitis—in which the tonsils are the chief seat of the inflammation, with considerable enlargement, general redness, and a muco-purulent accumulation in the follicles, giving the whole an appearance of numerous white

spots upon the red surface—was not an uncommon affection. It began with a sharp febrile attack, with painful deglutition, generally running through its course in a few days. It was not infectious. Instances of its occasional prevalence in public institutions, where it appeared to have an infectious character, will be presented later when the subject of diphtheria is considered.

Parenchymatous inflammation of the tonsils was a much more grave affection. It is characterized by great swelling of one or both tonsils and the velum palati, sometimes entirely closing the isthmus faucium, rendering respiration difficult, deglutition impossible, and the attempt to swallow excruciatingly painful. This disease, to which the name of quinsy adheres, is one of the most distressing of acute diseases. The act of deglutition is excited every few minutes by the mucus which accumulates in the throat, and every movement of the pharyngeal muscles occasions unspeakable agony. No liquid can pass the isthmus faucium, or, if any portion passes, it is apt to be returned by the nose. The inflammation results in deep suppuration, and the abscess breaks into the mouth after several days, with entire relief of the suffering and rapid recovery. Angina tonsillaris, as it is called, is apt to recur; and many persons suffer an annual or a more frequent return of these attacks.

Such are the anginas as they were seen before 1857. And they still occur, unchanged in character, and perhaps with no less frequency, the results of exposure to wet and cold and violent changes of weather, or the consequence of disorders of the chylopoietic system, from surfeits or other recognized causes of indigestion.

It may be a question, however, whether diphtheria may not in many instances have supervened upon them. The atmosphere is loaded with micro-organisms, a very small proportion of which are productive of general or special dis-

ease. The morbid bacteria require an appropriate nidus for their development. In this way we explain the history of tuberculosis, which destroys whole families, while others are entirely free from it; the *Bacillus tuberculosis* requires a suitable nidus, which it finds in some persons but never in others. If we attribute diphtheria to bacteria, we may reasonably conclude that sometimes inflammations of the throat, benign at the outset, become diphtheritic, the inflamed mucous membrane aiding in the development of the pathogenic germs which on a healthy membrane might never have matured; just as an ulcerated cutaneous surface may become covered with a diphtheritic membrane in an infected atmosphere. Jacobi says: "Diphtheria, as a rule, will not attack a sound mucous membrane." Hence it is probable that since diphtheria has been so prevalent we have seen fewer cases of simple faucial inflammation than formerly.

Diphtheria, however, may have its chief seat in the lungs, or in any of the mucous membranes, and affect the throat so slightly that it would be overlooked unless special search were made for it. In other words, we may have diphtheritic pneumonia.

Before the appearance of diphtheria in the United States, pneumonia was known only in sporadic form, and was generally regarded as a local inflammation, resulting from exposure to cold—except where it complicated or followed measles, typhoid fever, chronic nephritis, or some other disease. No writer thirty years ago took any other view.

The universal experience was that single uncomplicated pneumonia in adults, under the expectant treatment in use after 1850, was never fatal. Of 1,255 hospital cases reported by Dietl, Varentrapp, Skoda, and Bennett, between 1850 and 1857, only 87 were fatal—less than 7 per cent.—against a mortality of 28 per cent. of 1,403 cases treated

antiphlogistically in the previous ten years. And Dietl says that of his 750 cases every fatal one was complicated.

That cold and dampness are prominent exciting causes of pneumonia is shown by mortality tables in the United States and in Europe. It is much more frequent in winter and spring than in summer and autumn.

In Brooklyn the deaths by pneumonia in two years were: In 1886, first quarter, 489; second, 325; third, 176; fourth, 468. In 1887, first quarter, 492; second, 346; third, 168; fourth, 412.

Juergensen reports that in six large European cities 31·1 per cent. of the deaths by pneumonia take place in winter; in spring, 33·1 per cent.; in summer, 16·1 per cent.; in autumn, 17·7 per cent.—that is, 66·2 per cent. in winter and spring, and 33·8 per cent. in summer and autumn.

In London, for fourteen years, ending in 1854: first quarter, 31·3 per cent.; second, 21·4; third, 14·4; fourth, 32·9.

In the Vienna General Hospital the admissions of pneumonia for twenty years were: first quarter, 29·5 per cent.; second, 33·5; third, 15·4; fourth, 21·6.

In the United States Army, between 1839 and 1855, the cases of pneumonia were, from January to June 18th, 60 per cent.; from July to December 12th, 40 per cent.

Doubtless, in most cases where exposure to weather acts as the exciting cause, there is a predisposition in some idiosyncrasy or already existing functional disturbance, especially of the portal circulation.

Within the past fifteen years, one and another writer of high authority has adopted the opinion that acute lobar pneumonia is an essential fever, and not originally a local affection. The late Dr. Austin Flint read a paper to the New York State Medical Society in 1877 advocating this view, and reiterated it in opening a discussion upon pneu-

monia at the annual meeting of the New York State Medical Association in 1885.

At the same meeting Dr. Didama inclined to the same opinion, and said also: "There are good reasons for regarding pneumonia as infectious, and even occasionally contagious." He also quotes Sée as denying that pneumonia is a general disease, but admitting that it is infectious. And Dr. Biggs said: "I believe pneumonia to be an infectious disease due to a micro-organism." And Dr. Janeway quoted Klebs, Ebert, Koch, Friedlander, and others as describing a bacterium characteristic of pneumonia. Time will show whether their conclusions are trustworthy. But the opinion that pneumonia is a specific disease has originated within the last twenty years—inside the period of the present epidemic of diphtheria. There is no evidence in Dr. Flint's paper in 1855 that he regarded pneumonia as anything but a local disease.

Pneumonia has certainly increased in frequency and perhaps in proportional fatality within twenty years. In 1868, with a population in Brooklyn of 369,000, there were 247 deaths by pneumonia. In 1885, with a population of 666,000, there were 1,446 deaths by pneumonia. The mortality by pneumonia had become nearly six times greater, while the population had not quite doubled; thus pneumonia had become about three times as frequent or as fatal. There are no data to show whether the increase was in the prevalence of the disease or in its proportional mortality. There has been some falling off since 1885.

No explanation of this increase has been arrived at in New York or Brooklyn. But in some small cities and towns, where the tracks of disease are more easily followed, and where perhaps the specific character has been more marked, it has been established beyond question that a large number of cases of pneumonia are diphtheritic. Not a se-

quel of diphtheritic pharyngitis, but a diphtheritic pneumonia from the outset.

In Troy and some of the neighboring towns diphtheria has been for some years very prevalent, and Dr. William P. Seymour, of Troy, has for twenty years recognized the pneumonic form, which he has repeatedly verified, and his experience has been gradually confirmed by some other observers.

Dr. Seymour's large experience has satisfied him that diphtheria is to be regarded as a constitutional disease, manifesting itself upon any mucous membrane, and frequently exhibiting no exudation-membrane on the fauces, while attacking the lungs or other organs; that *the diagnosis does not depend upon the presence of a false membrane in the throat.*

This view of diphtheria, without a visible exudation-membrane, has never been generally accepted. For, although Greenhow, in 1861, evidently inclined to include in the same classification the non-membranous sore throats which he saw in diphtheria epidemics; and Dr. H. H. Childs, at the meeting of the Berkshire, Mass., Medical Society in January, 1861, expressed the opinion "that there was a succession of symptoms which revealed the diphtheritic poisoning as surely as the existence of the false membrane"; and Dr. R. C. Stiles, on the same occasion, said "that the presence or absence of false membrane on the pharynx or air-passages could not be made a test of the presence or absence of the diphtheritic poison in the blood";* yet the dictum of Bretonneau, that no inflammation unattended by exudation is diphtheritic, is still generally accepted,† and Jacobi does not consider any cases as diphtheria unless the membrane is present. He says: "The characteristic sign of diph-

* "Berkshire Med. Journal," 1861, pp. 70, 71.

† "Greenhow on Diphtheria," p. 42.

theria is the membrane," and "Diphtheria is characterized by its membrane."*

In striking illustration of the opinion which Dr. Seymour has maintained in spite of much opposition, the following very interesting and important cases are related by his son, Dr. William Wotkyns Seymour, from his own professional experience :

"Whether there is in all cases of infectious croup a membrane I very much doubt, and I base my opinion upon many cases, of which my own child's case is the most striking. The facts are as follows: My child, then within a few days of her first birthday, the last of December, 1883, became croupy. There was no fever, no membrane visible during the entire course of the croup, which lasted ten days, and gave me great anxiety, because of the very great prostration and blanching produced by the attack. A week later my wife was taken down with pains in the bones, marked sore throat, great physical depression, moderate fever, but never a particle of membrane. She remained away from the baby ten days, during which time the child was in the nurse's care. A few days after my wife's recovery the nurse came down in the same way, but never a shadow of a membrane. She also remained away from the baby ten days, and then again my wife had a second attack, but still no membrane. She was quarantined for ten days, and then returned to the care of the baby.

"During all this time, considerably over a month, the baby remained prostrated and blanched, and the lips, always bluish, became markedly so on the slightest exertion. With the hope of benefit from a change of air, my wife took the baby to her mother's on a large, airy, well-drained farm, a mile from a Vermont village, and what was the result? Within a week every member of my mother-in-law's family was down with diphtheria, and the exudation was very abundant. I asked the attending physician, Dr. William Platt, where the disease came from, and he responded that my family brought it, as he had seen no

* "Treatise on Diphtheria," by A. Jacobi, 1880, pp. 134, 147, 159.

case within a mile or more of the house in a year. To my further statement that in the previous illness no membranes had been observed, he said that, in his experience, membrane was not a necessary attendant upon cases which in themselves might be active carriers of the most deadly disease."

These interesting cases are sufficient for illustration. Similar experiences are furnished by Dr. William P. Seymour and Dr. S. A. Skinner, of Hoosic Falls, and doubtless could be matched by many others; but in large cities the traces of contagion are less easily followed than in small communities.

When the exudation-membrane is absent from the fauces there is the characteristic redness of the mucous membrane, with more or less swelling, and often an abundant secretion seen in strings of tenacious mucus stretching from the soft palate to the tongue.

The subject of diphtheria in the form of pneumonia and other inflammations, but especially pneumonia, I will present in the language of Dr. W. P. Seymour and Dr. W. W. Seymour, which they have kindly furnished for the occasion.

Dr. W. P. Seymour says :

"For the last fifteen or more years there has been a great change in the symptoms and course of diphtheria. There has been more blood poisoning, presenting a greater diversity in the character of different individual cases, or of many cases at different times, in accordance with the amount of the blood-changes or the physiological functions of the organ principally suffering. The localization has been upon the different vital organs more frequently than in the throat, causing in the lungs bronchitis, broncho-pneumonia, fibrous pneumonia, wandering pneumonia, pleurisy, and all other forms of pulmonary disease, doubtless differing in their histological character in no respects from the same form of disease from other causes, except in the character of the blood-changes, the presence of bacilli, and an infectious

character so pronounced and so common that the old-fashioned idiopathic pneumonia is rarely met with; and young teachers, having but little or no experience of any other form, talk of pneumonia as a specific form of fever and infectious, and of membranous croup as always diphtheritic. Localized in the liver, it has produced vomiting and purging. In the skin, so-called cases of measles or scarlet fever."

Dr. Seymour presents as an example of diphtheritic pneumonia an experience shared with Dr. Bontecou—who had charge of some of the patients—of nine persons, most of whom were in one family and all exposed to the contagion, who one after another were attacked with diphtheria, two of whom had pneumonia and died. In one of the cases of pneumonia, which began with a sore throat and was diagnosed as diphtheria by Dr. Seymour, specimens of the lung were sent for examination, on account of the unusual interest in the subject, to Dr. Welch and Dr. Delafield, who reported croupous pneumonia.

Dr. S. A. Skinner, of Hoosic Falls, in a paper on this subject prepared for the January meeting of the Union Medical Association of Bennington, Rensselaer, and Washington Counties—from which he has kindly permitted me to quote—reports the cases of a family of eight persons, seven of whom had diphtheria—man and wife, brother, three children, and two nurses. The father only escaped; the rest had sore throats; all the adults had pneumonia; the mother and her brother and one nurse died. He says:

"In 1878 I was called to see a woman who had been ill two days with a sore throat, and began to cough on the second day. Her three boys were recovering under domestic treatment from a mild diphtheria of the throat. On examining her, I found the fauces a dark red, with well-defined margin; the secretion in the mouth appeared very tenacious and stringy, stretching from the roof to the tongue. Skin slightly cyanosed. Her lungs presented signs of broncho pneumonia of a wandering character.

On auscultation, I diagnosticated pneumonia. Still I was not satisfied, as the characteristic symptoms were not in accordance with my previous experience in pneumonia. There was a fine crepitant râle at the base of the chest with resonant percussion. No expectoration to speak of. On the next day I expected to find the lung hepatized, but did not. She was expectorating to a small extent slightly tinged red sputa, but not viscid. Prognosis unfavorable. Death on the fourth day of her illness."

Dr. Skinner describes the other fatal cases, and says: "From that date up to the present time we have had occasionally cases of a similar type." He relates the cases of two women in the same family ill this year with diphtheritic pneumonia—both grave cases, but which recovered under the free use of whisky and carbonate of ammonia.

Dr. W. Wotkyns Seymour says:

"In my own practice I have seen in at least three instances diphtheritic patches on the vulvæ of children after they had been ill for several days with pneumonia accompanied by great prostration."

The only case of diphtheritic pneumonia that I have personally recognized is that of a girl, twelve years old, whom I saw first in February, 1886:

On the 26th she had been feverish for two days, after two weeks of a common cold, with cough. Reported hard vomiting and delirium the night before. She was in bed; pulse, 126; temperature, 103.5°. Tongue covered with a white coat except at tip and edges, which were red and smooth. No membranous exudation and no cutaneous eruption anywhere. No physical signs in chest. In fact, she had all the symptoms of scarlet fever without any rash.

February 27th.—She had a chill followed by increased heat, several loose dejections, almost incessant short cough, with occasional rusty sputa, and the next morning there was bronchial respiration with moderate dullness on percussion over upper right back, with some crepitus under the lower edge of the scapula.

Next day hepatization more complete; sputa small in quantity, rusty and viscid. Resolution began on the fourth day from the attack of pneumonia, with normal temperature. On the fifth day temperature 104.2° in axilla, with diarrhœa and heavily coated tongue, but no renewal of hepatization. Next day complete intermission, temperature being below 98° in axilla all day. Aphthæ in cheeks. The next day high temperature in afternoon, but no physical signs of pneumonia. After this the temperature never rose above 101.1° , with a daily remission, and after the ninth day from the first signs of pneumonia, never went beyond the normal point. After resolution of the hepatized lung and during the subsequent fever there were swelling and soreness of the tongue, with a dirty white coat. The mouth was sore and the lips bled easily. And on the 10th of March, twelve days from the attack, amid general improvement, while the lobes of the tongue were clean but swollen, the center was depressed, with a dirty-white exudation-membrane covering it. The patient was put on tincture of chloride of iron and phosphoric acid in frequent doses, in place of the quinine which she had been taking, and the next day the exudation was nearly gone. There was no albumin in the urine.

A case of double pneumonia, followed immediately by diphtheria, in which the exudation covered the entire mucous membrane of the mouth, and was followed by nephritis, is the only other instance in which I have recognized the conjunction of the two diseases, or either of them in immediate sequence. But the supervention of diphtheria upon various acute diseases is well known.

But I have obtained a brief history of a recent case in New York city, of which I will give an abstract:

Dr. Chalmers, Chief Ambulance Surgeon of Gouverneur Hospital, was attacked November 3d. On that day had an ulcer in the nose; the next day the left tonsil was covered with a diphtheritic exudation; the third day it had extended over the whole pharynx with the uvula and the right tonsil, and was seen by the laryngoscope to be upon the vocal cords. On the

fourth day there was pericarditis. On the seventh day circumscribed lobular pneumonia in the left lower lobe, with rusty sputa for a day. Several days afterward there was pneumonia of the whole of the middle and lower lobes of the right lung, with rusty sputa for several days. The pneumonia ran its course in about the usual time, but the exudation did not entirely disappear from the throat for five weeks. In the course of the pneumonia, endocarditis was developed, and the urine had 50 per cent. of albumin, which, after four days under the use of strophanthus, was reduced to 5 per cent. He is still in bed, but has no albumin in his urine, and convalescence goes steadily on. During the active stage of his disease he was treated with brandy—never less than thirty ounces in twenty-four hours, and on one day he took two quarts.

Dr. William W. Seymour gives the following pathological statement of the principal varieties of diphtheria:

“With regard to the lungs in diphtheritic cases there are two classes of cases: First, those in which, without any accompanying bronchitis or pneumonia, there is a loss of respiratory murmur over varying areas of lung tissue, accompanied by slightly impaired percussion and vocal resonance, by more or less pronounced want of air. These areas may flit from one position to another of a lung or both lungs in a few hours. This phenomenon is evidently due to a pneumoparesis, a poisoning of the pneumogastric. Dr. B. W. Richardson has recently described cases of ‘pneumoparesis,’ but he regards them as inevitably fatal. The condition can not be due to an infiltration, or it would not disappear so rapidly; nor can it be due to a local œdema, for in many cases there are no râles, and œdema, interstitial or intralobular, could not disappear so rapidly. But a paresis will fully account for all the lung symptoms, whether mild or severe.

“In the milder cases, with considerable prostration and arthralgias, the patient feels a want of air, as if breathing through cotton. Physical examination shows a feeble pulse, little or no elevation of temperature, but an area or areas of lung tissue where the respiratory murmur is either feeble or en-

tirely absent. There is very slight dullness and impaired vocal resonance. This persists from a few hours to several days. If the patient convalesces, the respiration becomes more and more full and no trace of disease is left behind. If, on the other hand, the case tends to a fatal termination, with little or no expectoration, there is increasing dyspnoea, râles coarse and fine are heard everywhere, respiration becomes more and more rapid and shallow, and the patient dies of asphyxia.

"It is almost impossible at times to say whether we are dealing with a case of pneumoparesis or what Buckler has described as leuco-inoitis, an acute inflammation of interstitial lung and bronchial tissue, which is chiefly of gouty or rheumatic origin.

"The second class of lung cases are the pneumonias. I do not mean the broncho-pneumonias, occurring from inspired irritants, but the croupous pneumonias, the lobar pneumonias. The present tendency of pathologists everywhere seems to be to regard croupous pneumonia as a general disease of which the lung trouble is only a symptom. This is the doctrine first advanced by Juergensen, and adopted by Pons, Grisolle, Flint, Loomis, Pepper, and others. I believe the present teaching that all pneumonias are manifestations of a general constitutional poison is a grave mistake. The pendulum has swung too far. The old writers, such as Gerhard, were too good observers not to see a general disease if it was common among their cases. But they did recognize epidemics of an asthenic type, and believed them to be different from the simple, definite-coursed, sthenic pneumonia.

"When pneumonia occurs as a result of diphtheritic poison, it is chiefly characterized by the disproportion existing between the amount of lung tissue involved and the disturbance of heart and nervous centers. The expectoration is usually slight, not commonly tinged with blood. The disease often migrates from one portion of the lung to another, and in general pursues no definite course in time or place. The cases not infrequently occur in groups. I have had five in one family; and not infrequently some of the attendants come down with pneumonia or pharyngeal diphtheria, and die of them.

"Diphtheria, erysipelas, malarial fever, typhoid, and acute rheumatism may, by their specific poisons, occasion croupous pneumonia, and it is to these poisons that we must look for the specificness of our disease.

"Diphtheria has been endemic here for thirty years, and it has only been since this time that a few good observers here have noted that our present pneumonias were not all of the same type as those occurring in the earlier days of their practice. My father has for twenty years maintained that the present form of pneumonia was infectious, and that it owed its greater or less infectiousness to our endemic diphtheritic poison.

"Pathologically, I believe the pneumonia to be due to microbiotic emboli, to lodgment of the cocci in the capillaries of the lungs. Friedlander has discovered a pneumococcus, and Max Schüller and others have shown the cocci of diphtheria in the painful joints, lungs, heart, and kidneys of fatal cases.

"The skin is frequently the seat of eruptions during diphtheritic attacks, which may more or less closely simulate the specific exanthematous eruptions. In the care of Dr. W. L. Cooper I saw a child who was an arsenal of diphtheritic anomalies. I saw it in consultation, when it appeared to be dying from diphtheritic croup. It had patches over the tonsils, nose, and pharynx; croup, pneumonia, and bronchitis; and at one and the same time had three typical rashes over the body. On the knees and thighs there were diffuse scarlatinal patches; on the belly, chest, and back an eruption discrete and crescentic, but a little more blue than measles; and on the face a triangular, red, swollen patch, with the apex at the right punctum lacrymale, and the base about three inches out on the cheek. This last form of eruption I have seen in eight cases of diphtheria; in some it has been single, in some double. It appears from the history to be an extension through the punctum of a diphtheritic inflammation to the cheek, and in its perfect form crudely represents a red butterfly.

"The nervous system, apart from its implication in the acute attack, affords a sequel of the disease which is not uncommon in a minor form, but rare in its most pronounced forms. This is the post-diphtheritic paralysis, which only recently has been

recognized as a peripheral neuritis. It is familiar to us all in the form of paralysis of the accommodation and of the soft palate. Two years ago I had a case which in this connection is most interesting. The history is as follows: J. M., ten years old, had, two weeks before consulting me, a sore throat, which prevented him for several days from eating anything solid. This subsided, and he was brought to me for a marked disturbance of speech, which made it impossible for one to understand him. His voice was nasal in tone and vibratory. There were marked emaciation, ataxia, and total loss of patellar and cremasteric and umbilical reflexes. The muscles were so atrophic that at first I thought it might be a rare case of acute muscular atrophy; but there were no fibrillary twitchings, and the tenderness and flaccidity of muscle, with absent reflexes, led me to diagnose diphtheritic, peripheral neuritis. Five days later I attended him through an attack of pneumonia migrans. The recovery from both the neuritis and pneumonia was complete."

In examining the history of pneumonia in all its known varieties, we must not fail to notice one form which has not received general recognition, and that is rheumatic pneumonia, or limited and wandering hepatization of portions of the lung in the vicinity of acute rheumatic inflammation of the fibrous tissue of the bronchi. This affection entirely escaped notice, and failed to be distinguished from idiopathic pneumonia, until described in 1853 by Dr. Buckler, of Paris, in a monograph on "Fibro-bronchitis and Rheumatic Pneumonia," and again in 1882 in the "American Journal of the Medical Sciences," under the name of "Rheumatic Leuco-ino-itis." But even the latest works on the practice of medicine make no allusion to it, and it is probably almost unrecognized. Dr. Buckler aptly says: "When a new truth is dragged out of darkness and held up to the light, men, often to avoid the trouble of thinking, refuse to regard it as anything different from what they have been taught and are accustomed to."

The symptoms, briefly stated, are a dry cough, without physical signs, without pain in the chest; and, after a period varying from a few days to several weeks, the development of fine crepitus, followed by bronchial respiration in portions of the lung; with an intercurrent articular or muscular rheumatism, which, if occurring during the early stage, may supersede the cough, which returns when the rheumatism of the extremities disappears.

A failure to recognize this rheumatic pneumonia must seriously affect the prognosis, from the inevitable error in therapeutics.

Dr. Buckler makes the interesting statement that Dr. Black published a paper in the "Edinburgh Medical Journal" in 1854, wherein he says that, in examining the air-tubes microscopically, he had discovered crystalline particles of uric acid and urate of soda deeply imbedded in the thin, white, fibrous tissues.

Possibly most of us have seen something of the rheumatic pneumonia, or broncho-pneumonia, without recognizing it. It is only three weeks since I first read Dr. Buckler's article; and last week I was called to a boy with this disease, to which Dr. Buckler's researches had opened my eyes. He is Irish, nine years old. I saw him first December 28th.

He was in bed; pulse 105, temperature 98.8° ; action of heart regular, but systolic souffle over cardiac region, and still louder over left back; respiration and percussion-sounds in front normal, and over right back; but percussion-dullness over the upper two thirds of left back, with moderately bronchial respiration and somewhat prolonged expiration over much of the same part, and moderate bronchophony about lower angle of left scapula. No râles. The history obtained from his mother was that after tramping with political processions at election-time (November 13th) he had had much general pain for several days, which was then superseded by a cough, of which he had recov-

ered early in December, and continued pretty well till about the middle of the month, when, after another exposure on a very cold day, he began to cough again, and has continued ill till the present time. He has had some shortness of breath from the first attack in November, and sometimes pains in limbs; some expectoration latterly, but never red; epistaxis two days in the week before I saw him. Had been out more or less, and the day before I saw him had much dyspnœa after mounting the three flights of stairs leading to their rooms, and seemed so much worse that his mother gave him a sweat at night and kept him in bed next day, where I found him. She had given him castor-oil three times within a week. His tongue is pale and flabby. He has no articular pain now. He has never had rheumatism before, nor dyspnœa until the attack in November. His brother, aged twelve, has a loud systolic souffle and violent action of the heart, with dyspnœa on exertion, and epistaxis, dating from acute articular rheumatism in infancy.

Directions: To remain in bed, on vegetable diet chiefly, and take ten grains of salicylate of sodium four times a day.

December 30th.—No dejection for three days. Coughs little. Has taken six doses of the salicylate; vomited the last one last evening. Has slept much. No pain. Pulse 100, temperature 98·4°. Bronchial respiration and dullness have disappeared. No râles. Heart sounds unchanged.

Continue salicylate three times a day. Laxative pill.

January 1, 1889.—Cough much less. Pulse 108. Bowels moved yesterday and the day before without pill. Had pain in cardiac region for four hours last evening, and whistling respiration (by his mother's report). Now percussion-sounds normal over whole back. On very careful auscultation, the respiration over the left back, especially in the central portion, is louder than on the right side, perhaps a little rude, but without any sound of expiration, and no râles. The cardiac souffle is decidedly less loud both in front and behind. He vomited his medicine this morning, with some mucus.

13th.—The boy has been out several times. No cough for a week past. Sometimes dyspnœa; none to-day. Has had no rheumatic pains. Respiratory sounds and percussion resonance

normal, heart's action excessive in force, with souffle as before. Is rather pale, with pale and flabby tongue. Has continued salicylate twice daily till two days ago. May now take tincture of chloride of iron and dilute phosphoric acid.

The history of anginas which I have undertaken to present would not be complete did I omit to relate some cases in which follicular amygdalitis has been infectious, under peculiar conditions, in public institutions. These are presented to me by Dr. Eliza M. Mosher, from her experience as physician to the Massachusetts Reformatory Prison for Women, and at Vassar College, where for three years she and Dr. Lucy M. Hall held jointly the professorship of physiology and the office of physician to the college.

She says:

"During my two years' service as physician to the Massachusetts Reformatory Prison for Women 154 patients were admitted to the hospital with follicular amygdalitis; 120 of these cases occurred between October 1, 1878, and May 1, 1879.

"The disease was exceptionally severe in many instances, due no doubt to the fact that the patients were women whose systems were much impaired by intemperance and debauchery. In spite of this, however, the course of the disease was almost exactly the same in all cases. No complications occurred, and all recovered, the length of the illness being from three to seven days, according to the severity of the attack, the recuperative power of the individual, and the involvement of both tonsils simultaneously or consecutively, the latter increasing the time spent in hospital by one or two days, other things being equal.

"Briefly, the symptoms were as follows: Chilliness alternately with flashes of heat, backache, and 'pain in all me bones,' a full feeling in the head, with or without headache; temperature 101° to 103° , pulse 96 to 120+. This condition was almost invariably first manifested toward evening or at bedtime, and there was often no complaint of sore throat at this stage. When examined the tonsils were found a little swollen and shining, with general redness of the pharynx. The speech was

characteristic—so much so that in numbers of instances I made a diagnosis before asking a question; it was a little thick, and gave one the impression of stiffness of the vocal apparatus.

“The morning following, the patient was usually too ill to rise, throat very sore, and deglutition difficult; saliva ropy and tenacious, tongue coated, usually moist and white, in the more severe cases brown and dry. One or both tonsils were dotted with white spots, or the surface was lightly covered with a gray exudate, which might have been mistaken for a diphtheritic membrane. Again and again I isolated cases, expecting them to develop into diphtheria, only, however, to find them following the regular course and convalescing in a few days.

“The severe constitutional disturbance left most of them weak and anæmic after an attack, requiring iron or some other reconstructive tonic for a week or so.

“The plumbing of the building was in a bad condition during the winter in which this epidemic occurred. It was all remodeled during the next year, and fewer cases have occurred there since.

“During my service at Vassar College the family numbered about the same as that at the Reformatory—about 400. Sixty cases only of amygdalitis occurred in three years. Here I proved, to my own mind at least, that prompt isolation of cases materially lessened the number. Three or four young ladies occupy a parlor in common, their sleeping-rooms opening from it. If one had an attack of amygdalitis and remained in her room, the others were almost sure to have a similar attack in about four days, whereas when she was promptly isolated they usually escaped.

“Here, as at the Reformatory, the course of the disease and its duration were uniformly the same, although the cases were seldom so severe. There were no complications and no sequelæ, but tonics had to be administered for some time afterward, or the general health suffered. After a trial of nearly all the remedies recommended for this disease, I settled down into the old-time method of treatment, consisting of a saline aperient, followed by quinine and tincture of iron, with or without an astringent and disinfectant gargle.”

Dr. Jacobi has been misquoted by Professor Fraenkel as saying that "diphtheria is spread by adults suffering from angina lacunaris." * He takes occasion to say, in a paper read before the New York Academy of Medicine, November 16, 1886: "What I did say, and do say, is this: that what in an individual case was called by the name of follicular amygdalitis and then gave rise to diphtheria, was diphtheria, and therefore produced diphtheria. Nor do I say that every case of follicular affection of the tonsils is diphtheria, and that diphtheria in general is spread by follicular amygdalitis in general; but I claim that the name of follicular or lacunar amygdalitis is but a subterfuge for the lack of a correct or complete diagnosis. There are cases of follicular amygdalitis of a catarrhal, purulent, fibrinous, and diphtheritic character, and its name ought to be dropped from our nomenclature, because of its giving rise to mistakes, unless it be complemented with a descriptive adjective." †

Follicular amygdalitis, the catarrhal inflammation which was briefly described in the early part of this paper, although under some circumstances infectious, as has just been shown, is not diphtheria. But the occasional uncertainty of diagnosis at the outset makes isolation of the patient sometimes desirable. In private houses there is seldom any reason for such isolation, seldom any doubt of the nature of the affection. The markedly sudden onset, with fever and pain, the early swelling of the tonsils, their color, and the unevenness of the surface from the swelling of numerous follicles even before the white muco-purulent secretions appear—so different from the smooth surface and slight swelling of the tonsils and soft palate seen at the commencement of diphtheria, with their peculiar raspberry redness,

* "The Medical Record," New York, November 27, 1886, p. 593.

† *Ibid.*

looking as if the color had been laid on with a brush—generally remove all difficulty in diagnosis. And the further course of amygdalitis, with the early recovery, confirms the diagnosis. And in the history of the epidemic at the Woman's Reformatory, the fact of one hundred and fifty-four cases occurring without subsequent paralysis or nephritis in any one, adds strength to the conclusion that the disease bore no relation to diphtheria.*

* I am well aware that Dr. William P. Seymour is the prime inspiration of this paper, and deeply regret that he should have left to me to offer what he is so eminently qualified by nature, education, and long experience to present in a much fuller and more satisfactory form. He owes the medical profession a comprehensive treatise on diphtheria, presented with a breadth which he more than any other man I know is qualified to give.



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